

AMENDMENTS TO CLAIMS

1. (Currently Amended) Apparatus for permanent placement across an ostium of a left atrial appendage in a patient, comprising:

a permanent [filtering] membrane configured to extend across the ostium of the left atrial appendage [and having a permeable structure which allows blood to flow through the filtering membrane but substantially inhibits thrombus from passing therethrough]; and

a support structure [defining] having a first deployed shape configuration having a [substantially cylindrical shape and a second configuration defining] a radially enlarged medial portion to permanently engage the interior wall of the left atrial appendage, and having a second retracted shape configuration having a radially reduced medial portion to fit within a delivery catheter in an undeployed state; said support structure having a first distal hub area where radially deployable limbs are gathered together in both the deployed and retracted state, a second medial hub area where deployable limbs are gathered together in both the deployed and undeployed state, and a third proximal hub area facing the left ventricle when in the deployed state, said support structure having a membrane support frame (1040) and associated membrane (40) wherein the filtering membrane is attached to the support structure extending across the ostium of the left atrial appendage when the deployable medial portion engages the interior of the left atrial appendage.

2. (Currently Amended) Apparatus as defined in claim 1, wherein the support structure comprises a plurality of fingers each having a first end portion, a second end portion, and a medial portion, and wherein the medial portion of each finger is radially outwardly expanded in the second configuration and the first end portion and second end portion meet at said first distal hub area and said second medial hub area.

3. (Withdrawn) Apparatus as defined in claim 2, wherein the support structure further comprises first and second cooperating threaded members configured for relative angular rotation, wherein each cooperating threaded member is attached to a respective first and second end portion of each finger, and wherein the first and second

end portions of said fingers are approximated by said relative angular rotation between the cooperating threaded members.

4. (Withdrawn) Apparatus as defined in claim 3, further comprising:
an actuator configured to expand the plurality of fingers by angularly rotating one of the cooperating threaded members about the longitudinal axis.
5. (Withdrawn) Apparatus as defined in claim 4, wherein the actuator further comprises an outer tube configured for releasable attachment to the support structure.
6. (Withdrawn) Apparatus as defined in claim 5, wherein the support member comprises a tab structure and the outer tube defines an aperture at an end portion thereof, and wherein the outer tube is releasably attached to the support member by engagement of the tab structure in the aperture.
7. (Withdrawn) Apparatus as defined in claim 5, wherein the outer tube is releasably attached to the support member by a frictional fit.
8. (Original) Apparatus as defined in claim 1, wherein the fingers are fabricated of stainless steel.
9. (Original) Apparatus as defined in claim 1, wherein the fingers are fabricated of nitinol.
10. (Currently Amended) Apparatus as defined in claim 1, wherein the fingers further include at a location proximate said medial portion [comprise] a barbed portion configured to engage an interior wall of the atrial appendage.
11. (Original) The apparatus of claim 1 further comprising an actuator configured to remotely radially outwardly expand the support structure.
12. (Original) The apparatus of claim 11, wherein the support structure comprises a plurality of fingers and wherein the actuator comprises a drive member configured to

expand the plurality of fingers by angularly rotating one of the cooperating threaded members about the longitudinal axis.

13. (Original) The apparatus of claim 1 wherein the support structure is a membrane support frame that is radially outwardly expandable to engage the atrial wall surrounding the ostium, and wherein the filtering membrane is attached to the membrane support frame to extend over the ostium of the left atrial appendage.

14. (Original) Apparatus as defined in claim 13, wherein the membrane support frame is fabricated from a material having shape-memory characteristics.

15. (Original) Apparatus as defined in claim 13, wherein the membrane support frame is elastically expandable.

16. (Currently Amended) A medical device for use with an atrial appendage having an ostium, said device comprising:

a expandable support frame fabricated from a material exhibiting shape memory and self expanding to a radially outwardly disposed configuration having a diameter larger than said ostium;

an expandable attachment apparatus coupled to said expandable support frame at a necked down hub area, located within said appendage adjacent said ostium expanded into conformity with the interior of said appendage to a diameter larger than said ostium;

thereby retaining said attachment apparatus in said atrial appendage.

17. (New) The medical device of claim 16 further comprising;
barbs on the periphery of said attachment apparatus to pierce tissue in said appendage.

18. (New) The medical device of claim 16 further comprising:
a membrane coupled to said expandable support frame.

19. (New) The medical device of claim 16 further comprising:

a membrane coupled to said attachment apparatus.

20. (New) The medical device of claim 18 wherein:
said membrane is a filtering membrane.
21. (New) The medical device of claim 19 wherein:
said membrane is a non-filtering membrane.
22. (New) A method of treating the atrial appendage of a patient, said appendage having an ostium with a nominal diameter the method comprising:
inserting an expandable attachment apparatus into said appendage, said expandable attachment apparatus coupled to a expandable support frame;
permitting said expandable support frame to self expand to a radially outwardly disposed configuration having a diameter larger than said ostium.
23. (New) The method of claim 22 wherein said inserting step comprises:
inserting an expandable attachment apparatus into said appendage, said expandable attachment apparatus of the type having a membrane and said apparatus coupled to a expandable support frame.
24. (New) The method of claim 22 wherein said inserting step comprises:
inserting an expandable attachment apparatus into said appendage, said expandable attachment apparatus and said apparatus coupled to a expandable support frame of the type having a membrane.
25. (New) A method of treating the atrial appendage of a patient, said appendage having an ostium with a nominal diameter the method comprising:
inserting an expandable attachment apparatus into said appendage, said expandable attachment apparatus coupled to a expandable support frame;
permitting said expandable support frame to self expand to a radially outwardly disposed configuration having a diameter smaller than said ostium.
26. (New) The method of claim 25 wherein said inserting step comprises:

inserting an expandable attachment apparatus into said appendage, said expandable attachment apparatus of the type having a membrane and said apparatus coupled to a expandable support frame.

27. (New) The method of claim 25 wherein said inserting step comprises:
inserting an expandable attachment apparatus into said appendage, said expandable attachment apparatus and said apparatus coupled to a expandable support frame of the type having a membrane.